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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/053,869	01/24/2002	Hiroshi Nagasawa	NAGASAWA=7	5352

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BROWDY AND NEIMARK, P.L.L.C.
624 NINTH STREET, NW
SUITE 300
WASHINGTON, DC 20001-5303

EXAMINER

FORMAN, BETTY J

ART UNIT	PAPER NUMBER
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1634

DATE MAILED: 11/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/053,869

Applicant(s)

NAGASAWA, HIROSHI

Examiner

BJ Forman

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 August 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 6,7 and 10-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 6,7 and 10-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 18 August 2006 has been entered.

Status of the Claims

2. This action is in response to papers filed 18 August 2006 in which claims 6-7, 12 were amended, claims 8-9 were canceled and claims 14-15 were added. The amendments have been thoroughly reviewed and entered.

The previous rejections in the Office Action dated 21 July 2005 under 35 U.S.C. 112, first paragraph are withdrawn in view of the amendments. The previous rejections under 35 U.S.C. 102(b) and 103 are maintained for reasons set forth in the Advisory Action of 2 February 2006. All other rejections, not reiterated below, are withdrawn in view of the amendments. New grounds for rejection, necessitated by the amendments are discussed.

Claims 6-7 and 10-15 are under prosecution.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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4. Claims 6-7, 9-11 and 14-15 are rejected under 35 U.S.C. 102(b) as being anticipated by Stein et al (WO 99/59722, published 25 November 1999).

Regarding Claim 6, Stein et al discloses a probe chip comprising a plurality of stacked and relatively flexible substrates, each having a plurality of through holes wherein the substrates are stacked to align the through-holes, a carrier filled in the through-holes wherein the carrier is porous relative to the substrate and probe molecules attached to the carrier (page 4, line 21-page 5, line 14, fig. 3-4 and 10) wherein the probe molecules attached to the surface of carriers in one groups are different from those in another group (page 8, line 17-page 9, line 23). Stein et al also teach the substrate is organic e.g. polyethylene (page 18, lines 10-19) as defined in the instant specification as organic (page 8, lines 37-38).

Regarding Claim 7, Stein et al discloses the method wherein the carrier is selected from the group consisting porous membrane (Fig. 7, page 21, line 23-page 22, line), non-woven fabric i.e. glass frit (page 26, lines 8-12) and a powder of porous glass i.e. 1 μ m beads (Fig. 10 and page 23, lines 10-page 25, line 11).

Regarding Claim 9, Stein et al discloses the method wherein the particle size of the glass bead is 1 to 100 μ m (page 25, lines 1-4).

Regarding Claim 10, Stein et al discloses the method wherein the probe is selected from peptides and oligonucleotides (page 8, lines 19-21).

Regarding Claim 11, Stein et al discloses the method wherein the substrates are stacked to align the through-holes of adjacent substrates in a liquid-tight manner so that liquid will not move laterally to adjacent through-holes e.g. o-ring (page 18, line 23-page 24, line 2) or sealing mechanism, Fig. 10 (page 23, lines 19-21).

Regarding Claim 14, Stein et al disclose the reaction probe chip wherein the porous glass has a particle size of 1 to 100 microns (page 25, lines 1-3).

Regarding Claim 15, Stein et al disclose a reaction probe chip comprising a substrate having a plurality of discrete through-holes; a first carrier (i.e. a first through-hole) made of

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porous material having probes attached and a second carrier (i.e. a second through-hole) made of porous material having probes attached and a substrate having first and second through-holes filled with the first and second carrier (page 4, line 21-page 5, line 14, fig. 3-4 and 10).

5. Claim 15 is rejected under 35 U.S.C. 102(b) as being anticipated by Beattie (U.S. Patent No. 5,843, 767, issued 1 December 1998).

Regarding Claim 15, Beattie discloses a reaction probe chip comprising a substrate (e.g. glass or silicon, Claim 11) in the "form" of a sheet (i.e. planar, Fig. 1A) and having a plurality of discrete through-holes; a first carrier (i.e. a first through-hole) made of porous material having probes attached and a second carrier (i.e. a second through-hole) made of porous material having probes attached and a substrate having first and second through-holes filled with the first and second carrier (i.e. wafer having multiple through-holes, Fig. 1B).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Stein et al (WO 99/59722, published 25 November 1999) in view of Dusterhoft et al (WO 98/08954,

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Regarding Claim 8, Stein et al discloses a probe chip comprising a plurality of stacked substrates, each having a plurality of through holes wherein the substrates are stacked to align the through-holes, a carrier filled in the through-holes wherein the carrier is porous relative to the substrate and probe molecules attached to the carrier (page 4, line 21-page 5, line 14), fig. 3-4 and 10) wherein the probe molecules attached to the surface of carriers in one groups are different from those in another group (page 8, line 17-page 9, line 23) wherein the carrier is a powder of porous glass i.e. 1 μ m beads (Fig. 10 and page 23, lines 10-page 25, line 11) and wherein the beads have perforations to provide greater surface area (page 24, lines 22-25) but is silent regarding the size of the perforation (i.e. pore size). However the claimed pore size of 0.1 to 0.5 μ m was well known in the art as preferred particles at the time the claimed invention was made as taught by Dusterhoft et al (Column 3, lines 38-40; Column 11, lines 41-60). It would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to apply the preferred pore size taught by Dusterhoft et al to the particles of Stein et al et al based on the preferred teaching Dusterhoft et al (page 11, lines 58-60) and for the expected benefit of providing increased surface area as desired by Stein et al (page 24, lines 22-25).

8. Claims 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stein et al (WO 99/59722, published 25 November 1999).

Regarding Claims 12-13, Stein et al discloses a probe chip comprising a plurality of stacked substrates, each having a plurality of through holes wherein the substrates are stacked to align the through-holes, a carrier filled in the through-holes wherein the carrier is porous relative to the substrate and probe molecules attached to the carrier (page 4, line 21-page 5, line 14, fig. 3-4 and 10) wherein the probe molecules attached to the surface of carriers

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in one groups are different from those in another group (page 8, line 17-page 9, line 23). Stein et al also teach the substrate is plastic e.g. polyethylene (page 18, lines 10-19). Stein et al specifically teaches that exemplary substrates comprise polyethylenes (page 18, lines 13-19) wherein the substrates are tightly sealed to provide liquid-tight fluid flow-through the through-holes (page 22, line 20-page 23, line 25). While they do not specifically teach heat-sealing, the courts have stated that a product is defined by the product, not by the process by which it is made.

“[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process.” In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985) see MPEP 2113.

Furthermore, it is noted that In re Best (195 USPQ 430) and In re Fitzgerald (205 USPQ 594) discuss the support of rejections wherein the prior art discloses subject matter in which there is reason to believe inherently includes functions that are newly cited or is identical to a product instantly claimed. In such a situation the burden is shifted to the applicants to “prove that subject matter shown to be in the prior art does not possess characteristic relied on” (205 USPQ 594, second column, first full paragraph).

The claimed substrates are deemed equivalent or an obvious variation of the tightly sealed substrate of Stein et al.

Response to Arguments

9. The claims have been amended to further define the substrate as “flexible” and to limit the carrier to “a porous glass powder” sandwiched between “polyethylene or polyester films”. In papers filed 29 April 2005, Applicant asserted that the cited art did not teach flexible substrates. Because the claims were not limited to “flexible” substrate, the Office responded by stating that the assertion was not commensurate in scope with the claims. The Office further stated that even if the claims were limited to flexible substrate, they would not be free

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of the cited art because flexibility is a relative term, such that any substrate material would be considered flexible when compared to some other less flexible substrate. Therefore, the substrate of Stein is flexible in comparison to some other less flexible substrate. Furthermore, Stein teaches a substrate is made of any glass or plastic e.g. polyethylene (page 18, lines 5-18, as cited in the final office action). Applicant has not provided any evidence demonstrating that the substrate of Stein is not flexible. Therefore, the amendment to Claim 6 does not define the claimed chip over the prior art.

The amendment to Claim 7 limits the carrier to porous glass powder further limiting new Claim 14, which defines the particle size of the powder. As cited in the final office action, Stein teaches porous glass powder (fig. 10 and pages 23-25). However, the particle size of the glass powder was not previously considered. Therefore, new Claim 14 would require further search and consideration.

The amendment to Claim 12 further limits the plastic film to polyethylene or polyester. Stein teaches stacked polyethylene substrates having filters in the through holes as claimed (e.g. page 18 and fig. 7-11).

Applicant asserts that the claimed invention is different from that of Stein. Applicant states that the object of the instant invention is that the user can peel or separate the stacked chips to place them in contact with the sample. Applicant's comment is noted, however, the intended use of the device as described in the specification (or arguments) does not define the device over the prior art. Applicant further states that the preferred embodiment utilizes a substrate having the dimension of 50 x 30 x 0.3 mm-having through holes of 2mm-diameter. The embodiment is noted, however, the claimed device is not limited the preferred embodiment having these dimensions. Therefore, the argument is not commensurate in scope with the claims.

Applicant asserts that Stein does not teach porous glass having the claimed pore size. The assertion is noted, however the previously examined claims were not limited to the pore size of porous glass. Therefore the argument does not address the rejected claims. Furthermore, amended Claim 7 does not define pore size as asserted by Applicant. Therefore, the argument is not commensurate in scope with the rejected or amended claims.

Applicant asserts that the heat-sealing as recited in Claims 12-13 differs from the sealed substrates of Stein. The argument has been considered but is not found persuasive because Applicant has not provided any factual evidence of the asserted difference. Therefore, the argument is deemed unsupported arguments of counsel.

Conclusion

10. No claim is allowed.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to BJ Forman whose telephone number is (571) 272-0741. The examiner can normally be reached on 6:00 TO 3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ram Shukla can be reached on (571) 272-0735. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

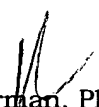
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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to (571) 272-0547.

Patent applicants with problems or questions regarding electronic images that can be viewed in the Patent Application Information Retrieval system (PAIR) can now contact the USPTO's Patent Electronic Business Center (Patent EBC) for assistance. Representatives are available to answer your questions daily from 6 am to midnight (EST). The toll free number is (866) 217-9197. When calling please have your application serial or patent number, the type of document you are having an image problem with, the number of pages and the specific nature of the problem. The Patent Electronic Business Center will notify applicants of the resolution of the problem within 5-7 business days. Applicants can also check PAIR to confirm that the problem has been corrected. The USPTO's Patent Electronic Business Center is a complete service center supporting all patent business on the Internet. The USPTO's PAIR system provides Internet-based access to patent application status and history information. It also enables applicants to view the scanned images of their own application file folder(s) as well as general patent information available to the public.

For all other customer support, please call the USPTO Call Center (UCC) at 800-786-9199.


BJ Forman, Ph.D.
Primary Examiner
Art Unit: 1634
November 3, 2006